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AUTHOR Ackerman, Paul D.
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ABSTRACT

This study examined adult-child interaction during story readings, specifically the complexity and richness of extra-script dialogue as a function of how familiar the child and adult reader have become with a particular story through repeated readings. Subjects were approximately 50 children, ages 3 to 6 years. Two-minute segments were selected from each of a series of tape-recorded sessions in which the child's preschool teacher or mother read him/her a story. Segments were transcribed and analyzed clinically and linguistically. Results indicated that: (1) there is a wide range of variation between readers and children while stories are being read; (2) children say more when they are familiar with the story, frequently reciting passages they have memorized and/or emitting more statements or questions; (3) readers emit about the same number of statements and questions whether the story is familiar or unfamiliar; and (4) as stories are repeated there is continuous growth in child-reader interaction, occurring in both concept indentification and language skill. This study supports the speculations of other research regarding the importance of repetition in the language learning process. (SB)

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Final Report

for

Story Repetition and Early Language Development

(OCD-CB-420)

Prepared by

Paul D. Ackerman, Ph.D.

Department of Psychology

Wichita State University

January, 1976

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Story Repetition and Early Language Development[1]

Paul D. Ackerman

Wichita State University

The best starting point in explaining the research reported in this document is to state the background of intellectual curiosity that has motivated it over the past several years. Beginning with personal experiences in reading to children and later stimulated by some intriguing support in the child development literature (Durkin, 1966; Irwin, 1960; Fodor, 1967), this author became convinced that reading a story to a young child and repeating it several times to the point of familiarity produces a stimulus setting supportive of qualitatively and quantitatively more complex adult-child interaction. The possible significance of such a phenomenon can be seen in the light of research (Bernstein, 1961; Hess & Shipman, 1967; Milner, 1951) which points to the conclusion that one of the major factors in early intellectual development is the quality of the specific patterns of verbal exchange which occur between children and the significant others around them.

There is good suggestive support in the literature regarding the possible advantages of repeated presentation of children's stories. Irwin (1960), for example, found that the systematic reading of stories led to an

[1]This research was supported by a grant from the U. S. Department of Health, Education and Welfare, Office of Child Development (Grant No. OCD-CB-420).

increase in the rate of phoneme production in two-year-old infants. Procedurally, Irwin provided mothers with "two or three" appropriate stories, at least one of which was to be read daily over a two-month period. At the end of each two-month period, the children were tested for phoneme production, after which two or three new stories were provided. Although the variable of story familiarity was not studied by Irwin, his procedure would seem to have insured that the experimental children received a good deal of exposure to a small number of stories. In a similar study, Fodor (1960) found that three months of daily reading to two-year-old, low-income children led to an increase in vocabulary growth. In the published report of his research, Fodor does not provide enough detail about his procedures to tell how often a given story was repeated. In his dissertation (Fodor, 1966), however, this detail is provided.

> "An effort was made to use all books within a given category with equal frequency and to avoid reading the same book to the same child for more than two or three days in succession. (The experimenter would however, return to each book several days later." The number of books read during each session ranged from three to five. Considerable repetition of the same book took place. Typically, a total of 16 books was covered in the course of the three month experimental period. This was not regarded as a methodological limitation. Extensive familiarity with a given book seemed to be required before it appeared to have any discernible influence on a child's acquisition of language skills. Children also seemed to enjoy a book more thoroughly as a consequence of increased repetition. For example, many children were repeatedly observed to grin in anticipation of a favorite picture about to appear on the next page of a familiar book--a picture about which they would then verbalize or to which they would then point with visible satisfaction, if not glee (p.60)". (italics added)

Finally, a recent book by Durkin (1966) reports on two longitudinal research studies aimed at assessing the level of achievement and adjustment of children who learn to read before entering the public schools. One of the aims of the research was to identify the early experiences associated with early

acquisition of reading skills.

Durkin reports:

> "A child's questions of "what does that word say?" seem to have been stimulated in a variety of ways. One frequent source of interest in whole words was the experience of being read to by a parent or an older sibling. Stories which were read and re-read were generally the ones that led to such questions as "where does it say that?" or "what's that word?" (p.137). (italics added)

A preliminary series of investigations conducted by this author and his associates (Ackerman, Baron, Dicker, Harper, Rataj & Richmond, 1972) clearly bore out the suspected relationship between verbal interaction and story familiarity. In a variety of conditions a clear result emerged with a greater quantity of verbal interaction occuring in story sessions where the book was highly familiar to the children. The research reported in the present document represents a continuation of the earlier studies with a focus on (1) maximizing the naturalness of the data collection settings, (2) improving the complexity and detail of the information gained with respect to the verbal interaction occuring in the story sessions, and (3) exploring the familiar-story variable under a wider range of independent variable conditions.

METHOD

Data Pool

The data base for the present investigation consisted of hundreds of tape-recorded story sessions involving approximately 50 children between the ages of three and six. A two-minute segment was selected from each of these taped sessions and transcribed to provide a written record of the interaction. These transcripts could then be examined "clinically" as well as numerically analyzed into various linguistic and syntax categories (for example, child or reader questions versus statements; single word, phrase

or complete sentence; echo of something the reader had just said; anticipating a word, phrase or sentence of story script before the reader said it; and so forth). The sample children were drawn from various available sources. Seventeen were children in a local preschool center, and they were read to by their teachers. Twenty-eight children were read to by their own mothers with sixteen of these also being read to by another mother.

The total data pool cannot be organized into a neat design, and neither can a neatly organized subset of data be pulled out which would allow examination of all the relevant questions. The course taken is to use the entire data pool attempting to pull out for each question the best comparison data available. For purposes of this investigation a familiar story is defined as one which a reader-child pair has read at least two times previously.

Procedure

Reading sessions were tape recorded by the reader with no experimenter present. Sixteen of the mothers brought their children to the laboratory for reading while another 12 read to their children in their own homes. All mothers were provided with books and reading schedules which, with minor variations, they followed. Table 1 provides a list of the books read.

Preschool teachers were more variable in their reading schedules, selection of books and number of readings. Problems were encountered as some teachers neglected to tape record some sessions. This resulted in a smaller preschool sample than originally hoped. Only those story reading series in which the investigator could be reasonably confident that the initial reading sessions were taped were included in the present data pool.

Insert Table 1 about here

As tapes were completed by the readers they were returned to the investigator for transcription and analysis. Reliability for the transcripts as well as the coded categories was determined by having a number of sessions independently coded a second time and then examining the correlations between the two records. Most of the categories showed Pearson r correlations in the high eighties and nineties. Correlations below .70 were judged as unacceptable and these variables were reworked from the original transcripts. In the case of one variable, it was necessary to go back to the original tape recordings. No variable was used in the analysis until adequate assurances of its reliability were established.

RESULTS AND DISCUSSION

Similar to the earlier reported findings (Ackerman, et al., 1972) it was found that where the child and reader were familiar with a given story because of repeated readings, there tended to be a greater amount of extra-script dialogue. This was true for mothers reading to their children as well as preschool teachers reading to their pupils. The result tended to hold up for narrative story books as well as simpler counting books. When the total dialogue was divided according to reader-versus-child verbalizations it was found that the overall differences were due to the quantity of child rather than reader verbalizations. For four conditions of mothers reading a narrative or counting book and preschool teachers reading a narrative or counting book only one showed a significantly greater amount of reader-verbalization in the familiar-story condition. (Teacher-Narrative $t = 4.11$, 5 df, $p < .05$). The amount of child-verbalization in the familiar story condition, on the other hand, was consistently greater across the four conditions (Mother-Narrative $t = 2.89$, 6 df, $p < .01$; Mother-Counting

$t = 3.61$, 7 df, $p < .01$; Teacher-Narrative $t = 4.33$, 5 df, $p < .01$; Teacher-Counting $t = 1.67$, 5 df, $p < .10$).

In order to present a more general picture of these findings, 72 instances from the entire data pool in which a story was read for at least four repetitions, were selected. For 35 of these 72 cases (48%) the first reading contained the fewest number of child verbalizations. For an additional 16 cases (22%) the second reading contained the fewest number of child verbalizations. Thus for 51 of 72 cases (70%) the children emitted their lowest level of verbal output in one of the unfamiliar-story sessions. These results are presented graphically in Figure 1.

Insert Figure 1 about here

Breakdown by Interaction Categories

Having established significant overall differences in the amount of verbal interaction for the familiar and non-familiar story settings, the next step was to divide the overall interaction into independent interaction categories. Four child categories and four reader categories were finally settled on. Child verbalizations were categorized into questions; echoes of words or phrases a reader had just uttered; anticipations of script words or phrases prior to the reader saying them; and a miscellaneous statement category for all other child verbalizations. The categories of "echoes" and "anticipations" were given classification priority over questions and statements in the sense that if the child echoed a question it was classified as an echo rather than a question.

Reader verbalizations were divided into a miscellaneous statement category; questions; mild positive reinforcers (i.e., "uh-huh", "yeah" and "okay",

etc.) and strong positive reinforcers (i.e., "very good!", "that's right!", etc.). Reliability for all categories was established as outlined earlier in the procedure section. Except where otherwise noted analyses of data in this section were confined to children read to in the preschool and children read to by their mothers in their own home.

Two somewhat different questions were asked with respect to these interaction categories. The first was simply which of them showed a significantly different frequency of occurrence in the familiar and non-familiar story settings. The second question was which one or more of the variables provided the most consistent basis for discriminating between the familiar and non-familiar story settings. The first question was approached by submitting the category data to a multiple t-test procedure (T-Test, 1972) and the second by submitting them to a Stepwise Discriminant Analysis (Stepwise Discriminant Analysis, 1969).

As to the question of significant differences, one set of scores (randomly selected where subjects had received more than one story series) from each of 19 reader-child pairs was tested (T-Test, 1972). These tests showed each of the four child categories to either have a significantly greater frequency in the familiar-story setting or to approach significance in that direction. The child's miscellaneous statement category ($t=4.02$, 18 df, 1-tail $p < .001$) and script anticipation category ($t=2.77$, 18 df, 1-tail $p<.01$) were highly significant; and the child question category ($t=1.46$, 18 df, 1-tail $p < .10$) and child echo category ($t=1.67$, 18 df, 1-tail $p < .10$) approached significance in the direction of higher familiar setting rates. Only one of the four reader interaction categories showed significance. The readers emitted a significantly greater number of strong positive reinforcers in the familiar story settings ($t=1.92$, 18 df, 1-tail $p < .05$). One

interesting difference between mothers and preschool teachers is that teachers gave many more verbal reinforcers. Teachers in our sample emitted an average of about one reinforcer every half minute, whereas the mothers emitted an average of about one reinforcer every three minutes. This result is based on figures from the total data pool.

With respect to the question of most consistent discriminator variables the Stepwise Discriminate Analysis (Stepwise Discriminant Analysis, 1969) showed one variable to stand out significantly, and that was child's script-anticipations. ($F = 10.69$, 1 & 24 df, $p < .01$ for narrative stories and $F = 4.42$, 1 & 26 df, $p < .05$ for counting stories.) This is not unexpected since logically a non-reading child cannot recite script passages of unfamiliar books. This activity varies considerably with some children doing almost none of it, even when the story is quite familiar to him, to cases where entire books are memorized and recited. The author suspects that this activity more than any other in the story-time setting is related to the child's early and successful learning to read. What is reassuring in terms of the present data is that script-anticipation does not occur in the familiar-story setting at the expense of other categories of child interaction. In fact all examined categories of child interaction seem to be facilitated, or at least not hindered, by increased familiarity with a story's content.

Initiation of Interaction

Another important question deals with how verbal departure from story script occurs. Is there any difference in initiation patterns in familiar and nonfamiliar-story settings? Does the relative contribution of reader and child initiations change as the story becomes familiar? To examine this variable each breakoff point between script and verbal interaction was tabulated in terms of four mutually exclusive categories. Two reader initiation

categories were (1) any verbal question, statement, etc. and (2) a category which the author calls the "pregnant pause". The "Pregnant pause" is an interactional initiation which occurs when a reader is reading from script but suddenly stops reading in mid-phrase. The stopping point is punctuated by an uplift in intonation which calls for the child to complete the script phrase. Two child initiation categories were (1) non-script statements, questions, etc. and (2) child echoes and anticipations of script phrases not preceeded by a reader "pregnant pause".

The same two-step procedure of analysis as was followed for the interaction categories was used for the initiation categories. As to a general comparison of initiations in the familiar and nonfamiliar-story settings the readers' "pregnant pause" ($t = 2.45$, 18 df, 1-tail $p < .05$) and the children's "echo and script-anticipation" ($t = 1.84$, 18 df, 1-tail $p < .05$) categories were found to be more frequent in the familiar-story setting. The category of general child initiation approached significance in the direction of the familiar-story setting ($t = 1.46$, 18 df, 1-tail $p < .10$).

With regard to best discriminator variables, the results correspond to what would be expected from the earlier interaction category results. The one significant Stepwise Discriminator was the child script-echo and anticipation category ($F = 5.70$, 1 & 24 df, $p < .05$ for Narrative Stories and $F = 3.00$, 1 & 26 df, $p < .10$ for Counting Stories).

Again the findings correspond to what common sense would suggest. It is the story content itself which becomes richer in its potential to stimulate interaction. Thus the two categories of initiation most closely tied to the story script are the ones which yield significant differences. However, this gain in one certain aspect of initiation does not occur at the expense of the other categories which are more modal in the nonfamiliar-story setting.

Clinical Observations and Conclusions

The procedure of reading a story and rereading it at successive story times until a child is thoroughly familiar with it has great potential in two areas:

1. Reading readiness. As a child becomes familiar with a book he begins to memorize various script passages. A sensitive and patient adult reader can provide ever expanding opportunities for the child to identify and learn to recognize words. A few of the children in our sample who never exhibited any reading skill with nonfamiliar stories learned to read along with their reader or even by themselves after a few readings. This factor is, of course, closely tied to the reader's willingness to provide response opportunities for the child during the story. (There is a vast range of differences in our sample of readers with regard to acceptance and encouragement of child responses during story time). This finding gives direct evidence and support for the speculations of Durkin (1966). She notes in her book, Children Who Read Early, that early interest in words by preschool children is stimulated by listening to stories and particularly stories which are read and reread (page 137).

Our data suggest that repeated reading might even be beneficial to reading readiness where minimal encouragement and response opportunity is provided by the reader. In many cases our sample children have been heard mumbling along quietly with familiar stories as the reader reads, even though no more open response opportunity is provided. We have also observed some of this kind of activity with children viewing Sesame Street which contains a good deal of repetition coupled also with an absence of response opportunities.

To give an indication of the extent of this script-recitation verbal activity on the part of children a matched-set of two-minute, familiar

(session six) and nonfamiliar (session one) story sessions cross cutting our data sample were selected. Fifty-three percent of the familiar-story segments contained memorized script verbalizations as compared to only 12 percent of the unfamiliar-story sessions.

2. Development of interaction and linguistic skills. The present findings suggest that in addition to reading readiness, the repeated story procedure can be very useful in helping a child acquire linguistic and cognitive skills. Its usefulness stems from two characteristics. First it is a powerful stimulus setting for generating dialogue. It gives the reader and child a common foundation of shared information and perspective upon which communication can develop. The reader and child who may come from vastly different worlds begin to find themselves with a shared experience with controllable content and complexity. Secondly, the repeated story provides stability and continuity over time so that the dialogue that is generated can grow and branch out as repeated readings occur. If a reader asks a child a question one day, and he doesn't answer correctly, then the reader can correct him and remember to ask the question again the next day. If the child answers correctly on the other hand, the reader can expand the question a little the next day thereby pushing the child's understanding to a new level. Similarly the child can return again and again to something he is curious about until he is finally satisfied.

Our data show numerous examples of this kind of thing. For example in one case a mother is reading a long (1000 words) narrative story to her five-year-old boy. On the sixth reading of that story the child interrupts to ask about a picture:

Child: "What's that?"

Mother: "Those are clouds."

In session eight at the same point in the story the child returns to the matter by asking:

Child: "Are these clouds?"

Mother: "Yes, those are clouds."

As a second example, a more detailed exchange between this mother and child also begins in session six. The child interrupts the mother who is reading script:

Child: "What are them?"

Mother: "Those are trees."

Child: (echoing) "Trees."

Mother: (resumes reading)

Then in session eight the child returns to the matter again interrupting mother as she reads:

Child: "What are them?"

Mother: "Those are trees, those are dead trees."

Child: (echoing) "Dead trees."

Finally on session nine the child once more interrupts:

Child: "What are them?"

Mother: "Those are trees."

Child: "Dead?"

Mother: "Yes, that's a dead tree."

Child: "Who killed em?"

Mother: "Well, they just died. They got old and died."

Child: "Oh."

A similar phenomenon at a less complex level was discovered in some earlier data from a group of young mentally retarded children who were read to by one of my staff members. (Baron and Ackerman, in press). In ten

two-minute story segments for each of six children (i.e. 60 story segments), we found a total of 56 instances in which a word was used "imitatively" by a child in one session and "volitionally" (i.e. without the reader saying it first as an "imitation") in a later session. Furthermore, in 17 of these 56 instances the children were later observed to combine the target word in a volitional phrase or sentence. Thus the children were going through apparent learning sequences in which words were first imitated, then used spontaneously without prompting and finally [illegible] with other known words to make a meaningful phrase. By comparison, a matched set of unfamiliar-story sessions with these same children revealed only five similar sequences, none of which extended to the phrase level.

These findings lend support to those of earlier writers. For example, Lillywhite and Bradley (1969), writing about the communication disorders of the retarded, noted the phenomenon of "... the retarded child who learns and repeats long TV commercials..." (p. 164). They suggest, "The repeated viewing of short segments of linguistic interchange of a meaningful nature, followed by opportunities to use such language appropriately would be an efficient means of developing language concepts." (p. 165 - Italics added). Also, as reported earlier, Irwin (1960) found that repeated reading of stories led to increases in phoneme production, and Fodor (1966, 1967) found that similar daily reading resulted in increased vocabulary growth.

SUMMARY

The purpose of this research was to examine the adult-child interaction processes occurring during the time that an adult reader presents a story to a preschool-age child. The central focus was to examine the richness and complexity of dialogue as a function of how familiar the child and reader had become with a particular story through repeated reading. The findings may be summarized as follows:

1. There is a wide range of variation in the dialogue between readers and children while stories are being read. One mother or teacher is very different from another. Any conclusion or recommendations regarding story time must take this into account.

2. Children say more when they are familiar with the story than when it is new to them.

   a. they frequently memorize and recite script passages of familiar stories.

   b. They emit more statements when the story is familiar and ask at least as many questions.

3. Readers emit about the same number of statements and questions with familiar and unfamiliar stories.

4. There is day-to-day continuity and "growth" in the child-reader interaction as stories are repeated. This "growth" occurs in terms of both concept identification and language skill. This finding provides documentation and support for the speculations of other researchers in the field regarding the importance of repetition in the language learning process.

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Stepwise Discriminant Analysis (BMD07M), Health Sciences Computing Facility, UCLA, Revised July 24, 1969.

T-Test, Statistical Package for the Social Sciences, Version of Feb. 1, 1972.

Table 1

List of Story Books*

Title	Author	Publisher	Type
Count the Puppies	Carolyn Dee	Rand McNally	Counting
A Day in the Life of a Clown	William Archibald	Stein and Day	Narrative
The Hiding Place	Pauline Meek	Western	Narrative
Juggle with me	Ilse-Margret Vogel	Golden Press	Counting
Lazy Fox and Red Hen	Jane Dwyer	Western	Narrative
Manuel's Cat	Dorothy Fein	Western	Narrative
My Big Golden Counting Book	Lilian Moore	Golden Press	Counting
The Poky Little Puppy	Janette S. Lowrey	Golden Press	Narrative
Scuffy the Tugboat	Gertrude Crampton	Golden Press	Narrative
A Tale of Tails	Elizabeth H. MacPherson	Golden Press	Narrative
Ten Little Animals	Carl Memling	Golden Press	Counting
The Wonderful School	May Justus	Golden Press	Narrative

*A few books were selected from the preschool collection and are not listed here since author and publisher are not known.

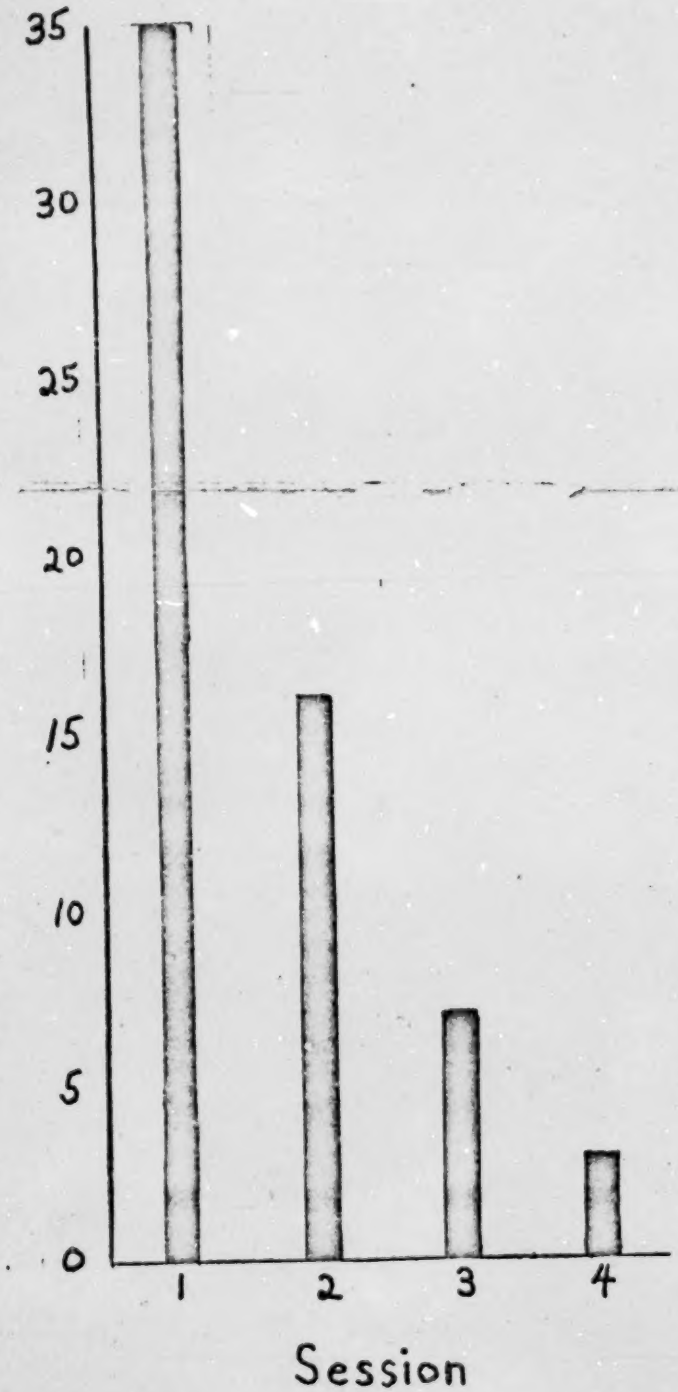

Fig.1 Frequency distribution of story sessions containing fewest number of child-verbalizations.